"Readiness through Knowledge"

Headquarters Air Weather Service

Aerospace Sciences Division

Providing Service Worldwide

T-TWOS

February 1997 Number 31

Delta Con

(Δ-Con)

AIR WEATHER SERVICE

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As part of your Local Analysis and Forecast Program (LAFP), you've identified both centrally and locally produced products. Most products produced at the centralized facilities depict synoptic-scale weather features; however, the mesoscale features also concern the forecaster. To help focus on the mesoscale, units can use local products to supplement centrally produced ones. This T-TWOS suggests using the Delta-Con (D-Con) Command Sequence (CS) as a tool to optimize these smaller-scale products.

You can obtain local products that provide a mesoscale view of the upper-air and surface conditions through your Automated Weather Distribution System (AWDS). Examples of local products obtained through AWDS include upper-air and surface analysis products from Formatted Binary Data (FBD), lower- and upper-air analysis products from Uniform Gridded Data Fields (UGDF), Skew-Ts, and vertical cross-section (distance Log-P diagrams) products. However, the one you may use the most and with the greatest success is the Local Area Work Chart (LAWC).

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Delta Con (Δ-Con)

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☑ Introduction

As part of your Local Analysis and Forecast Program (LAFP), you've identified both centrally and locally produced products. Most products produced at the centralized facilities depict synoptic-scale weather features; however, the mesoscale features also concern the forecaster. To help focus on the mesoscale, units can use local products to supplement centrally produced ones. This T-TWOS suggests using the Delta-Con (Δ-Con) Command Sequence (CS) as a tool to optimize these smaller-scale products.

You can obtain local products that provide a mesoscale view of the upper-air and surface conditions through your Automated Weather Distribution System (AWDS). Examples of local products obtained through AWDS include upper-air and surface analysis products from Formatted Binary Data (FBD), lower- and upper-air analysis products from Uniform Gridded Data Fields (UGDF), Skew-Ts, and vertical cross-section (distance Log-P diagrams) products. However, the one you may use the most and with the greatest success is the Local Area Work Chart (LAWC).

The LAWC allows the forecaster or observer to monitor operationally significant weather within the local analysis area. You can resolve finer details on an LAWC because the area covered is on a smaller scale than a centralized product.

An AWDS-produced LAWC can take incoming FBD and plot it on a centered, zoomed map background over the unit's location. Depending on the viewing preference, isopleths of FBD may or may not exist. You can display the plotted data according to a variety of options. The focus of this T-TWOS is to describe the Δ-Con CS and the AWDS Metwatch process.

DISCUSSION

The Δ-Con CS utilizes the *Threshold* and *Change* options located on the *Plot With FBD* panel in conjunction with the *Change Plot Model* option to create a visually enhanced Metwatch tool. Δ-Con produces two separate graphic displays. The first display utilizes six different plot models to show only the parameters that meet specific change thresholds within the last hour. These parameters are wind speed, temperature, dew-point, ceiling, and visibility. The data will only plot if the change criteria are met (doesn't meet criteria, nothing will show at the position of the plot model). Additionally, the CS will always plot station identifiers. As few as one or as many as six parameters will plot for a particular site (see Figure 1). These parameters are color-coded (either red or green) for quick identification purposes (increases are in green, decreases in red). For example, all decreasing temperatures, dew-points, ceilings, etc., that meet the change criteria will be plotted in red, all increasing changes will be green.

The second display uses three plot models to display a current, specialized Horizontal Weather Depiction (HWD) with color-coded plots of visibility and ceiling conditions. In addition, it always plots the station identifiers, cloud amounts, and streamlines. Present weather will plot if it exists. Four to five parameters will always plot (see Figure 2, Page 3).

Based on the principles of continuity and advection, the streamlines and color-coded weather conditions identify upstream weather conditions that may affect you.

When you run Δ-Con, you can get a quick, but thorough, understanding of the surrounding weather changes. In addition, you can run Δ-Con sequentially, meaning it is loop slot independent. Because you can initiate it within any loop slot, you can fill all 12 loop slots. This allows for the chronological display (for up to 6 hours) of the changes in surface conditions.

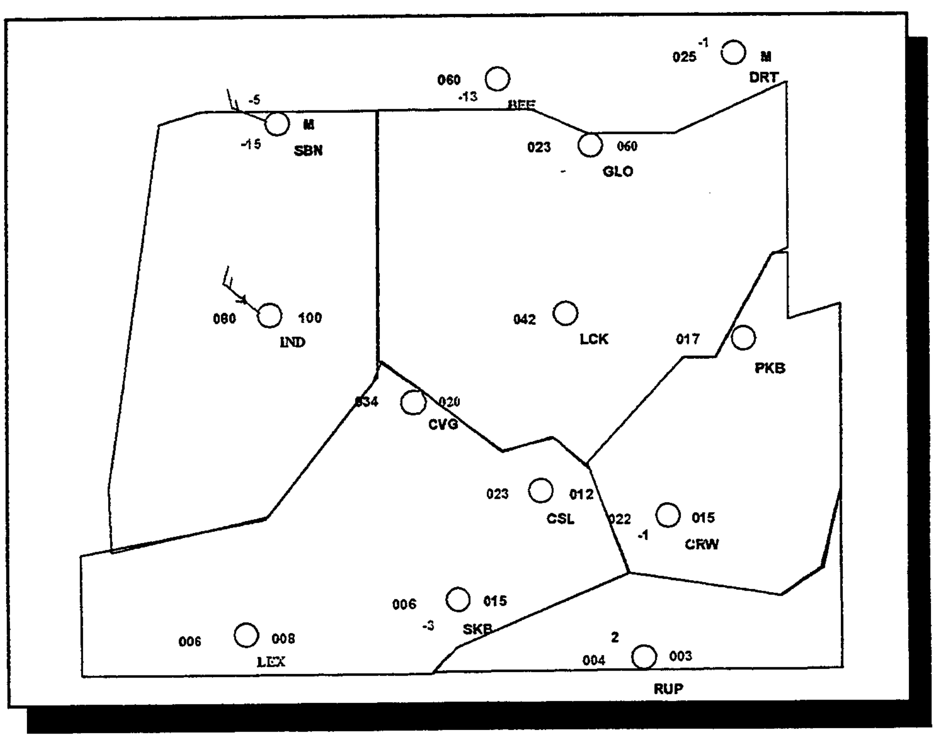

Figure 1. Delta Con Command Sequence First Display

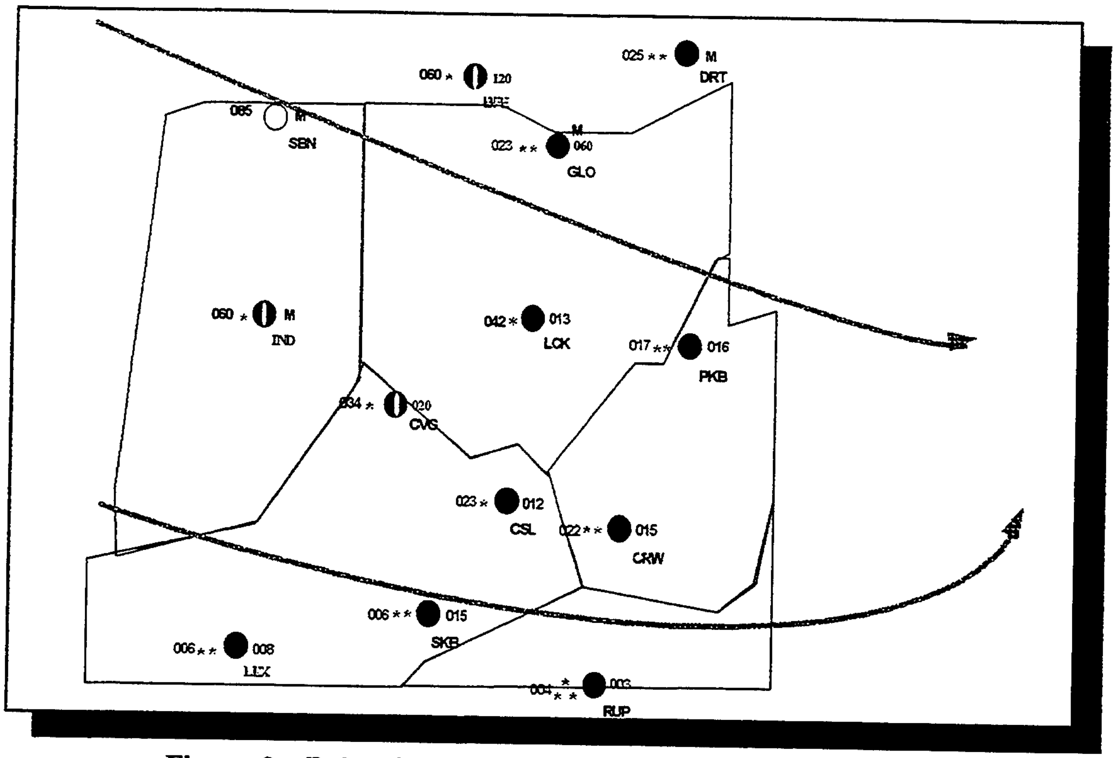

Figure 2. Delta Con Command Sequence Second Display

You should run Δ-Con as soon as possible after the receipt of FBD. It takes approximately 5 minutes to run (using Nearest-Neighbor technique on AWDS 3.1, even less using AWDS 3.2).

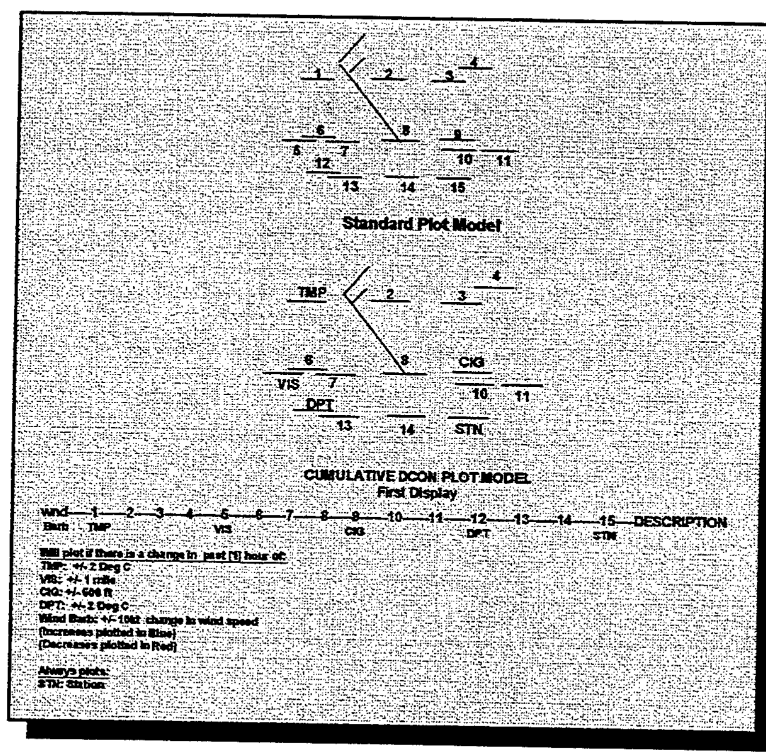

Figure 3. Delta Con Plot Model for Display 1 (Cumulative)

☑ Δ-Con Creation

To create Δ-Con, you must follow two steps:

- Loading plot models
- Writing the command sequence

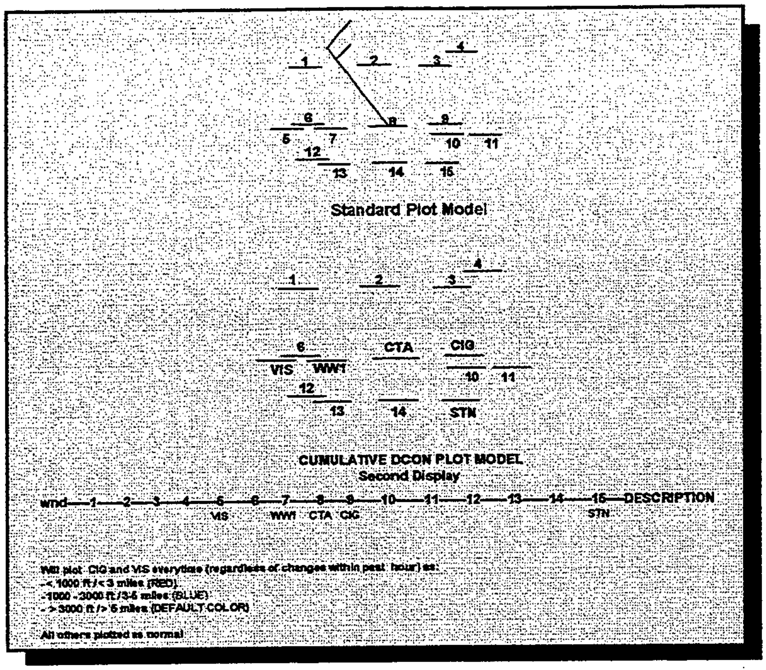

Figure 4. Delta Con Plot Model for Display 2 (Cumulative)

Loading the Plot Models

You must use separate plot models for each parameter because of the way AWDS handles the plotting. As you recall, when using the standard plot model for surface plots, even though you may use the threshold, change, or phenomena options for a particular parameter, all parameters associated with the plot model will always show when they meet any of the criteria.

For example, using the standard surface plot model for FBD and the threshold option of temperature less than 0°C, it will plot only those stations exhibiting temperatures less than 0°C. However, in the process of plotting those stations, it will plot all the other parameters filling plot positions associated with that plot model. This is why the first step in creating Δ-Con begins with tailoring plot models.

In order to show changes in individual parameters without showing the entire plot, thus eliminating potential cluttering and allowing for quick reference, you must develop a separate plot model for each parameter change that you wish to isolate and identify. Seven specialized plot models are used in Δ-Con. Figures 3 and 4 show parameter placement within the plot models. Follow the steps in Table 1 for creating your plot models. When you're done, your final plot table should resemble Figure 5.

Model #   **Position # (on the plot model)**

–	wnd	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Label
#X																STN	Dconlpslt1
#X						VIS		WW1	CTA	CIG						STN	Dconlpslt2
#X	BARB																Deltaconspd
#X		TMP															Deltacontmp
#X													DPT				Deltacondpt
#X										CIG							Deltaconcig
#X						VIS											Deltaconvis

Figure 5. Δ-Con Plot Model Setup After Loading

- Click on Administration Panel.
- Click on *Plot Models* (Print out for future reference).
- Locate eight open plot model slots (plot models with no filled-positions). Note: AWDS reserves slot 1 for SFC standard, and 29 is the UGDF (**Leave these alone!**).
- Exit Administration.
- Click on Administration Panel.
- Choose *Change Plot Model.*
- Click *Plot Model Number.* Enter the number of the first open plot model. Hit enter.
- Click *STN* and assign it to position #15 within the plot model (see **Figures 3 and 4**).
- Label "Dconlpslt1." Click *Send.*
- Click *Plot Model number.* Enter the next open plot model.
- Click *STN* and assign to position #15, *CTA* to position #8, *WW1* to position #7, *VIS* to position #5, and *CIG* to position #9. Label "Dconlpslt2." Click *Send.*
- Choose the next available plot model.
- Turn on Wind Barb. Label "Dconspd." Click *Send.*
- Choose an open plot model. Click *TMP* and assign it to position #1. Label 'Deltacontmp.' *Send.*
- Choose an open plot model. Click *DPT* and assign it to position #12. Label 'Deltacondpt.' *Send.*
- Choose an open plot model. Click *CIG* and assign it to position #9. Label 'Deltaconcig.' *Send.*
- Choose an open plot model. Click *VIS* and assign it to position #5. Label 'Deltaconvis.' *Send.*
- Exit the Administration Panel.
- Re-enter Administation Panel.

Table 1. Steps for Loading Plot Models

Writing the Δ-Con CS

- Go to the quadrant that you want to use for the creation of the CS. Do a *Clear All.* Now go to a loop slot other than the first (this is important because you **do not** want to choose a loop slot after you initiate the CS. Later, you will want the option of which loop slot to place the CS).
- Start recording the command sequence.
- Name it "Delta_Con."
- Enter Administration, toggle *Load Product Upon Selection*, toggle the checkmarks "off" for *Read Local Database* and *Write Local Database Only.*
- Check-on *Same PI Set w/Sharing* (located within *Edit Loop*). **This step is not necessary if you plan on using this CS in conjunction with an LAWC CS. In that case, the LAWC CS will take care of all map backgrounds**, see *AWDS and the Complete Metwatch Program*, Page 7.
- Select *Clear Loop Slot.*
- Select map background for use (most likely will be the same as in your current LAWC program).
- Go to *Generate Component.*
- * Delete everything from time entry, enter "C."

    Optional
    - Hit the "PAUSE" button.
    - Select "Force Prompt."
    - Enter a valid time (DD/HrHrMinMin, i.e., 11/1300) for a time entry.
    - After creating this command sequence, it must be edited for the prompt to work.
    - Using the editor, delete the **met_data_s_proc...time** entry.
- Click on *Surface.* Toggle to *Original Data.*
- .Click *Plot with FBD Data.*
- Enter the plot model number that corresponds to 'Dconlpslt1.'
- Choose all stations. Click *Generate Plot.*

- Enter the plot model number that corresponds to 'Deltaconspd.'
- Click *Change*, go to text entry. Delete all existing text.
- Enter "SPD, +10, 1" (corresponds to a 10 knot wind speed increase within the last hour). Click *Generate Plot.* Exit *Generate Component.*
- Enter *Edit Composite*. Color-code the wind speed change green. Exit *Edit Composite*. (You will follow these same steps for color-coding each time you plot a parameter.)
- Enter *Generate Component.* Choose *Plot with FBD.*
- Click *Change*, go to text entry.
- Enter "SPD, -10, 1" (corresponds to a 10 knot wind speed decrease within the last hour). Click *Generate Plot.*
- Enter *Edit Composite*. Color-code the wind speed change red. Exit *Edit Composite*.
- Enter *Generate Component.* Choose *Plot with FBD.*
- Enter the plot model number that corresponds to 'Deltacontmp.'
- Click *Change*, go to text entry.
- Enter "TMP, +2, 1" (corresponds to a 2°C increase within the past hour).
- Click *Generate Plot.* Color-code green.
- Enter *Generate Component.* Choose *Plot with FBD.*
- Enter "TMP, -2, 1" (corresponds to a 2°C decrease within the past hour).
- Click *Generate Plot.* Color-code red.
- Enter the plot model number that corresponds to 'Deltacondpt.'
- Click *Change*, go to text entry.
- Enter "DPT, +2, 1" (corresponds to a 2°C increase within the past hour).
- Click *Generate Plot.* Color-code green.
- Enter *Generate Component.* Choose *Plot with FBD.*
- Enter "DPT, -2, 1" (corresponds to a 2°C decrease within the past hour).
- Click *Generate Plot.* Color-code red.
- Enter *Generate Component.* Choose *Plot with FBD.*
- Enter the plot model number that corresponds to 'Deltaconcig.'
- Click *Change*, go to text entry.
- Enter "CIG, +500, 1" (corresponds to an increase in the cloud ceiling of 500 ft within the past hour).
- Click *Generate Plot.* Color-code green.
- Enter *Generate Component.* Choose *Plot with FBD.*
- Enter "CIG, -500, 1" (corresponds to a decrease in the cloud ceiling of 500 ft within the past hour).
- Enter the plot model number that corresponds to 'Deltaconvis.'
- Click *Generate Plot.* Color-code red.
- Enter *Generate Component.* Choose *Plot with FBD.*
- Click *Change*, go to text entry.
- Enter "VIS, +1, 1" (corresponds to a 1-mile increase in visibility within the past hour).
- Click *Generate Plot.* Color-code green.
- Enter *Generate Component.* Choose *Plot with FBD.*
- Enter "VIS, -1, 1" (corresponds to a 1-mile decrease in visibility within the past hour).
- Click *Generate Plot.* Color-code red.
- Exit *Generate Component*, and go to *Edit Composite.*
- Save composite as 'DeltaCon 1.'
- Select Metbacklog.
- **Zoom-up on the map background in order to provide a more-detailed look at surrounding and upstream stations.

- Orient the map background over your weather station.
- Click *Forward.* (To enter next loop slot, **do not** select a specific slot. The same map background as in the first loop slot should be present).
- Select *Clear Loop Slot.*
- Go to *Generate Component.*
- Enter *Plot with FBD Data.*
- Enter the plot model number that corresponds to 'Dconlpslt2.'
- Click *All Stations.*
- Click *Generate Plot.*
- Enter the plot model that corresponds to 'Deltaconcig.'
- Click *Threshold,* go to text entry. Delete all existing text.
- ***Enter "CIG <+3100" (corresponds to ceilings less than 3100 feet). Click *Generate Plot.*
- Color-code blue using *Edit Composite.*
- Reenter *Generate Component,* choose *Plot With FBD* Enter "CIG <+1000" (corresponds to ceilings less than 1000 feet). Click *Generate Plot* (color-code red).
- Within *Generate Component,* enter the plot model that corresponds to 'Deltaconvis.'
- Click *Threshold,* go to text entry.
- Enter "VIS < +4.3" (corresponds to visibilities less than 5 statute miles). Click *Generate Component.* Color-code blue.
- Enter "VIS < +2.6" (corresponds to visibilities less than 3 statute miles). Click *Generate Component.* Color-code red.
- Exit *Plot with FBD,* go back into *Generate Component.*
- ****Choose *Streamline with Raw Data.* Toggle *FBD Data.* Choose method (Barnes, Quick Method). Click *Start.*
- Depart from *Generate Component,* enter *Edit Composite.*
- Name composite "DeltaCon 2."
- Select edit loop.
- Save loop as "sfc_metwatch_loop."
- Enter Metbacklog.
- Stop recording; no looping.

* AWDS requires that the data from at least 200 surface stations are on file in your system prior to it being considered a "current" or "C" data set. Normally, it takes around 15 minutes after hourly report time before you can create a new "C." If a new "C" is not yet available, AWDS will default to the most recent "C" on file (normally, the hour prior).

** For the best results, ensure that you loaded all available surface stations into the AWDS' system tables for the particular map background and zoom-level desired. With AWDS Version 3.1, use the Station Select Priorities and Station Select Surface tables to do this. In addition, you must coordinate all data requirements through Air Force Global Weather Center (AFGWC). With AWDS Version 3.2, *Station Select Surface* and *Station Select Priorities* combine into one table, but the requirement of AFGWC coordination remains the same.

*** Tailor the values for your ceiling and visibility color-codes according to your location and mission.

**** With AWDS 3.2, consider using the Barnes Method as a more accurate means to produce isoplethed surface parameters and streamlines. However, if under time constraints use the Quick Method.

AWDS AND THE COMPLETE METWATCH PROGRAM

As mentioned earlier, Δ-Con is a tool that enhances a unit's Metwatch program. The first display created a "visual" LAWC for the quick identification of changing conditions. The second display has the cloud height and visibility conditions color-coded and surface streamlines displayed to identify low-level flow. Based on the principles of continuity and advection, these streamlines and color-coded weather conditions help to identify upstream weather conditions that may be representative of your own future local area weather. What if you already have an AWDS-generated LAWC? Is Δ-Con of any use?

Absolutely! In fact, Δ-Con works best when used in conjunction with an existing standard LAWC CS [a standard LAWC CS produces an LAWC of standard FBD plots, using Plot Model 1 (SFC standard) and may have one or two isoplethed parameters]. Δ-Con alerts you to rapidly changing weather conditions that may require closer interrogation with an LAWC.

Creating an LAWC CS

If your unit doesn't already have a standard LAWC CS, it will take only a few moments to create. The most common AWDS Metwatch Program consists of a CS producing an LAWC of standard FBD plots with one or two isoplethed parameters (see Figure 6). These LAWCs typically have a dedicated quadrant on AWDS. The Δ-Con does not have any additional requirements but will enhance your existing LAWC product.

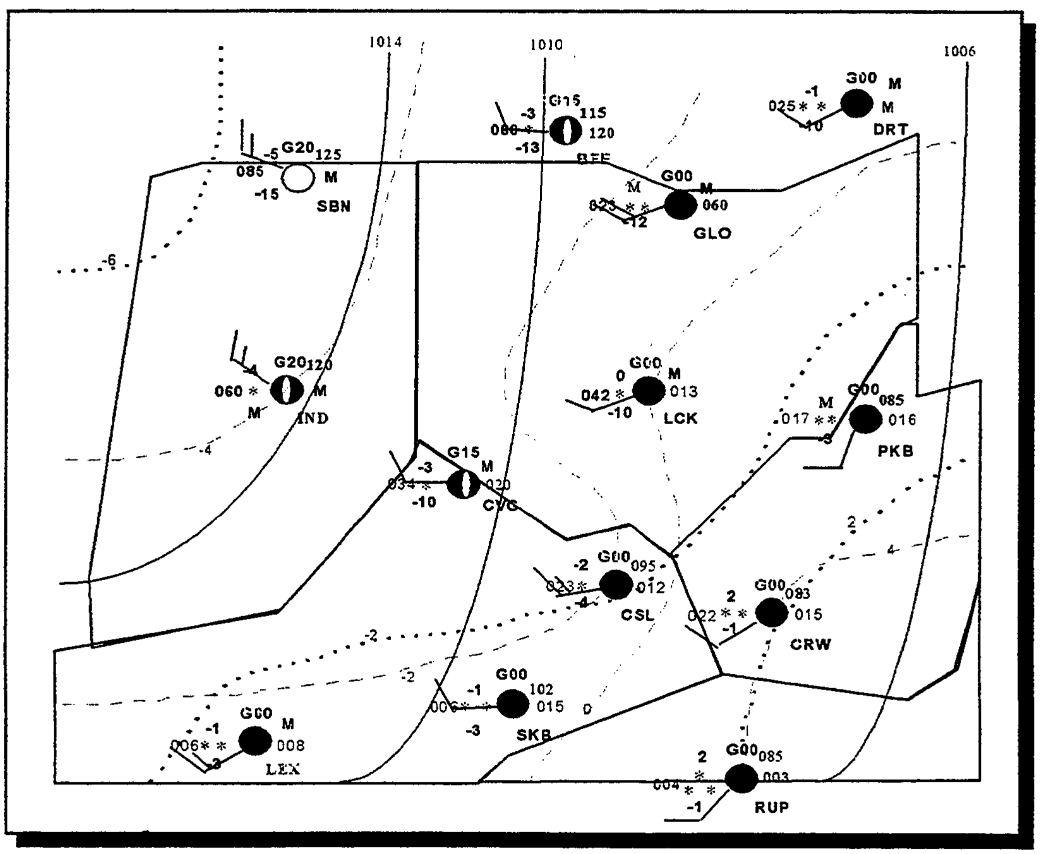

Figure 6. LAWC

LAWC Plot Models

Similar to the Δ-Con CS, with an LAWC you will first have to check your plot model table. If you want only the standard parameters plotted, use Plot Model 1. Any tailoring of the LAWC will require you to choose an available plot model for your customizing. We recommend you consider adding gusts (GST) to your plot model.

For the following LAWC (see Figure 6, Page 8), we used default Plot Model 1, but modified it (see Figure 7). We then color-coded ceiling height and visibility conditions. In addition, we added isobars, isotherms, isodrosotherms, and a 12-hour isallobaric analysis (the isallobars will be "checked" off from the analysis in order to avoid cluttering, but may be viewed by "checking" it back on in the *Edit Composite* window).

To create this LAWC, you don't have to create any additional plot models. All necessary plot models have already been created during the Δ-Con CS creation. It is important your LAWC Plot Model has CIG in Position 9 and VIS in Position 5.

Δ-Con/LAWC Sequence

You should load the Δ-Con and LAWC CSs sequentially within the loop slots of your choice. Both CSs are designed to be loop slot independent (Δ-Con will automatically fill the adjoining loop slot next to Δ-Con Display 1, but the two loop slots will begin where you place them within the loop slot sequence). In other words, prior to running either the LAWC or Δ-Con sequences, you have the choice of which loop slots to fill. This is a bonus, allowing you to have a perfectly chronological metwatch history. Obviously, we recommend that you start the first metwatch sequence with an LAWC in Loop Slot 1 (1st hour), the first Δ-Con sequence at Loop Slot 2 (filling both Loop Slots 2 and 3 (2nd hour), repeating Δ-Con within Loop Slots 4 and 5 (3rd hour), then starting over again with an LAWC within Loop Slot 6 (4th hour). Your initial CS order should look like Figure 8. Note: Loop Slots 11 and 12 remain blank in order to maintain a consistent order.

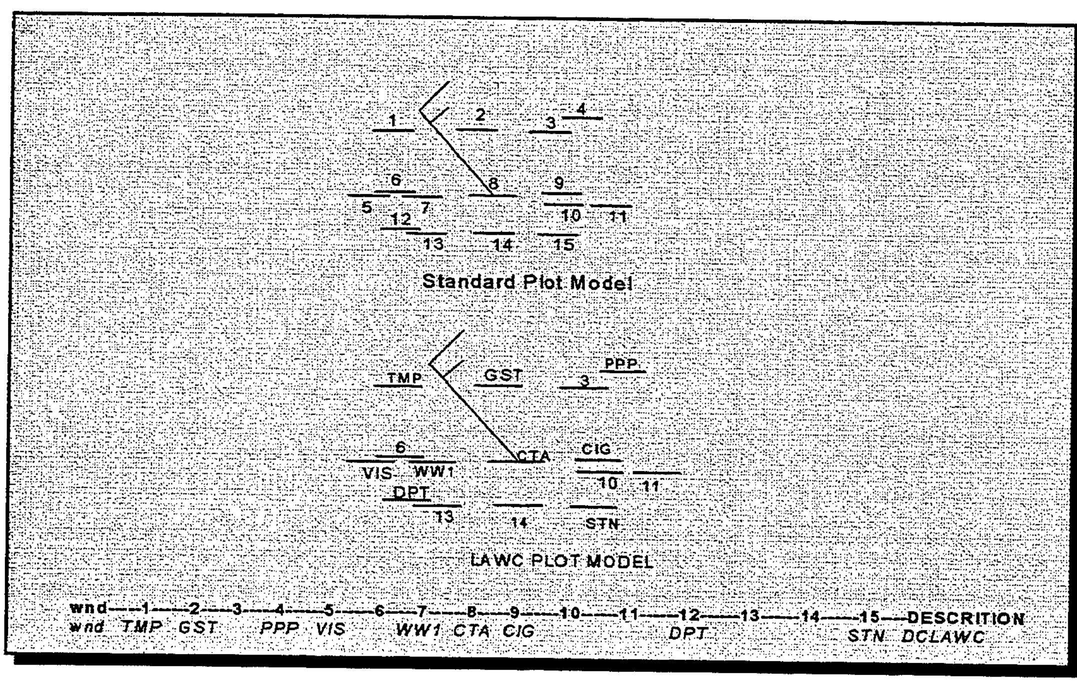

Figure 7. LAWC Plot Model

AWDS Metwatch Command Sequence Creation

- Go to the quadrant that you want the AWDS Metwatch loop sequence to be created; do a *Clear All.*
- Go to a loop slot other than the first loop slot where you want to create the LAWC (must be operator chosen prior to the start of the CS; once again, you want to create this CS so that it is not loop-slot dependent). The CS will not automatically default to a specific slot, see Figure 8.
- Initiate the Command Sequence.
- Name it "LAWC."
- Clear the loop slot.
- Enter Administration, toggle *Load Product Upon Selection*, toggle the checkmarks on then off on *Read Local Database* and *Write Local Database Only.*
- If you plan on using this with the Δ-Con CS, select *Same PI set w/Sharing* (see Δ-Con/LAWC Sequence, Page 9).
- Load the appropriate map background.
- Select *Generate Component.*
- Select *Surface.* Toggle to *Original Data.*
- Delete everything from time entry, enter "C."
- Select *Plot with FBD.*
- Enter the plot model number that corresponds to the plot model that you want to use for your station.
- Select *All Stations.*
- Select *Generate Plot.*
- Change plot model to that which corresponds to 'Deltaconvis.'
- Click *Threshold.*
- Delete all old text, Enter "VIS < +4.3." *(Once again, enter the threshold values for CIG and VIS to best support your local forecasting or operating procedures).*
- Select *Generate Plot.* Color-code blue.
- Enter "VIS< +2.6."
- Select *Generate plot.* Color-code red.
- Change plot model to that which corresponds to 'Deltaconcig.'
- Go to *Threshold.*
- Enter "CIG < +3100." *Generate Plot.* Color-code blue.
- Enter "CIG < 1000." *Generate Plot.* Color-code red.
- Select *Generate Component.*
- Select *Isopleth with Raw Data.*
- Toggle to FBD, choose analysis method (Barnes, Quick, etc.).
- Toggle LGG checkmark to 'off.'
- Select 'PRS' as field (use 'PPP' on AWDS 3.2).
- Select Color as light-blue, and make the line solid.
- Choose base value and increment.
- Select *Isopleth Only.*

- Within isopleth window, select 'TMP' as field.
- Color red, line dashed.
- Choose base value and increment.
- Select *Isopleth Only.*
- Within isopleth window, select 'DPT' as field.
- Color green, line dashed.
- Choose base value and increment.
- Select *Isopleth Only*, depart isopleth window.
- Select *Generate Component.*
- Choose *LGG with Raw Data.*
- Select mesh size, toggle to FBD, choose analysis method (Barnes, Quick, etc.).
- Select 'PRS' (PPP on AWDS 3.2).
- At the *Add/Sub Times,* toggle to "-" (minus sign).
- At the *Add/Sub Times*, clear text, enter "C-12."
- Click *Add/Sub Times.*
- Choose *Isopleth Result.*
- In isopleth window, keep checkmark on and don't change any text.
- Make color yellow, select style as solid line and choose an increment and base value.
- Select *Isopleth Only.*
- Select *Pause*, choose *Metbacklog.*
- Exit isopleth window, enter edit composite window.
- Remove checkmark associated with the isallobaric analysis.
- Save composite as "sfc_anal."
- Select edit loop.
- Save loop as "sfc_metwatch_loop."
- Zoom-in and orient the map over your area of interest (you can always move it again after the CS is complete).
- Stop recording, no looping.

Loop Slot	Product	Valid Time(Z)	Creation Time (Z)
1	LAWC	01/0000	01/0025
2	Δ-Con Display 1	01/0100	01/0125
3	Δ-Con Display 2	01/0100	01/0125
4	Δ-Con Display 1	01/0200	01/0225
5	Δ-Con Display 2	01/0200	01/0225
6	LAWC	01/0300	01/0325
7	Δ-Con Display 1	01/0400	01/0425
8	Δ-Con Display 2	01/0400	01/0425
9	Δ-Con Display 1	01/0500	01/0525
10	Δ-Con Display 2	01/0500	01/0525
11	Blank		
12	Blank		
1	LAWC	01/0600	01/0025

Figure 8. Loop Slot Setup Using Δ-Con Command Sequence

	Always Plots	Special Plots w/Default Colors
(LAWC) **1st, 6th loop slot**	WND, TMP, PPP VIS, WW1, CTA CIG, DPT, STN, GST	VIS / CIG (<3 mile / <1000 ft) - red (3-5 miles / 1000-3000 ft) - blue (>5 miles / >3000 ft) - default Isotherm--dashed red Isodrosotherm--dashed green Isobars--solid light blue Isallobars--solid brown (hidden)
(Δ-Con, 1st Loop Slot) **2nd, 4th, 7th, 9th loop slot** **Positive Changes in Green** **Negative Changes in Red**	STN	VIS change of +/- 1 mile DPT change of +/- 2°C TMP change of +/- 2°C CIG change of +/- 500 ft SPD change of +/- 10 kts (barb) (All changes within past hour)
(Δ-Con 2nd Loop Slot) 3rd, 5th, 8th,10thloop slot	STN, CTA, WW1 Streamlines	VIS / CIG (Same as in LAWC, above)

Figure 9. Complete Metwatch Program Display

The Final Product

Upon the successful completion of your LAWC and Δ-Con CSs, the information within Figure 9 is available by loop slot, color code, and special plot.

To help visualize the final product and what it can do for you, let's take a quick look at an FBD plot. Use CRW, located in southwest West Virginia. In Figure 1 (first display of Δ-Con), we notice that CRW has a number of plots associated with it. Since we know that this display shows parameters that changed within the past hour, we infer that there have been changes in their ceiling, dew-point, and visibility (since those are the only parameters that plotted). We also know that the changes are at least as much as our input change requirements (i.e., 500 ft change for ceilings). However, because of the color-coding, we know that everything green is an increase and everything red is a decrease. In summary, at CRW the visibility has decreased at least 1 mile and is at 2 3/4 statute miles, ceiling has increased at least 500 feet and is at 1,500 feet, and the dew-point has increased at least 2 degrees to –1°C. All changes occurred within the past hour!

If you view the Δ-Con second display (see Figure 2, Page 3), you notice that both the ceiling and visibility have been "flagged" with a color. This could indicate they have dropped below local flying minimums (depending upon your threshold values). We also notice it is snowing there, and the station is overcast. Finally, we see that the surface streamlines are indicating northwesterly flow (clearing?).

Finally (in reality this would most likely be our first viewing), our standard LAWC (see Figure 6, Page 8) has all the additional weather information we may desire. In addition to the standard weather parameters, information about temperature and dew-point advection can also be gathered. Finally, the isobars are plotted, as well as a 12-hour isallobaric analysis (although the isallobaric analysis is not visible at the completion of the CS, it is only a checkmark away). Although the isallobars may not show you much on a zoomed-in level, you can, of course, zoom-out to see the analysis on a larger-scale.

☑ Conclusion

The Δ-Con CS is an additional tool to use within your weather unit's Metwatch program. It provides the user with a quick update to actual parameters that have changed at surrounding sites, as well as a HWD of the surrounding area. When used in conjunction with a LAWC that is produced every 3 hours, Δ-Con can fill the time gaps allowing for a more thorough Metwatch program. Use the Δ-Con CS as part of the "Five Minute Metwatch" concept. This concept shifts the focus from "Do you know what is happening?" to "I know what is happening and why!" It consists of the observer or forecaster initiating the LAWC or Δ-Con CS (depending upon the hour), interrogating the radar, analyzing the latest satellite shot, viewing surrounding observations, and finishing with an analysis of the LAWC or a visual analysis of the Δ-Con. All these actions should take around 5 minutes and should be completed at least once per hour.

The Metwatch loop sequence within this article is only a skeleton starting point. Try different analysis methods, especially if using a system version other than AWDS 3.2. For example, you could change mesh sizes, objective analysis techniques, heights of streamlines (i.e., 850 mb vs. surface), add Metwatch alerts (using system tables), adjust the CIG and VIS thresholds, etc. Of course, workcharts should be used to the maximum extent possible in order to show continuity.

The bottom line is you should tailor this product for its maximum usefulness at your particular location.

"The bottom line is you should tailor this product for its maximum usefulness at your particular location."

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AWDS Information on the Web

HQ AWS/XONA Weather Systems Applications
http://infosphere.safb.af.mil/users/public_www/public/aws/hqaws/xon/systems.htm

ESC (Hanscom AFB)
http://tbmcs.af.mil/systems/awds.htm

Combat Weather Systems (AWDS and TAWDS)
http://tbmcs.af.mil/systems/cws.htm

Keesler Schoolhouse AWDS System Manager Course Description
http://www.kee.aetc.af.mil/334trs/courses/awds.htm

GSC-AWDS
http://www.gte.com/Cando/Govt/Docs/awds.html

T-TWOS

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TT #2:	Advection on AWDS	Apr 92
TT #3:	Cloud-Free Line of Sight Users Manual	Apr 92
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TT #31:	Delta Con (Δ-Con)	Feb 97